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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/372,531	08/11/1999	WERNER BOHNSTEDT	534P007	1518

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EXAMINER

DOVE, TRACY MAE

ART UNIT PAPER NUMBER

1745

DATE MAILED: 06/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
09/372,531	BOHNSTEDT ET AL.	
Examiner	Art Unit	
Tracy Dove	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 5, 7, 8 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 7, 8 and 11-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/ISB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other _____ |

DETAILED ACTION

This Office Action is in response to the communication filed on 2/27/04. Applicant's arguments have been considered, but are moot in view of the new grounds of rejection. Claims 1, 5, 7, 8 and 11-15 are pending. This Action is made FINAL, as necessitated by amendment.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 5, 7, 8, 11 and 12-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 5, 12 and 13 recite the limitation "said at least one elongated continuous vertical rib" or "said at least one elongated vertical rib" or "the at least one elongated rib". There is insufficient antecedent basis for this limitation in the claim. Claims 1 and 13 have been amended to recite "two to four elongated continuous vertical ribs".

Claims Analysis

The limitation "for a lead-acid storage battery having a useful life" in claim 1 is not given patentable weight because it is an intended use limitation.

The limitation "for a storage battery having a useful life" in claim 13 is not given patentable weight because it is an intended use limitation.

The limitation "for a lead-acid storage battery" in claim 15 is not given patentable weight because it is an intended use limitation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 7 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knauer, US 5,558,952 in view of Grimes et al., US 4,396,689, further in view of Daramic II-V: Polyethylene battery separators for starter batteries (www.daramic.com/pages/daramic_V.html).

Knauer teaches a pocket separator for retaining positive or negative electrode plates in an electric storage battery. The pocket separator is formed of a porous sheet that has a plurality of continuous vertical ribs, a plurality of broken inclined ribs at the side edges, and a plurality of broken vertical ribs in the center which engage the positive or negative plate in the pocket. The porous sheet material has a plurality of differently configured ribs on its inner surfaces. See col. 1, lines 49-64. The separator sheet is constructed of a synthetic resin such as polyethylene (100 vol% polyolefin) or other suitable material which is compatible with the battery environment where it is to be used (col. 2, lines 43-46). The pocket separator may be used in a lead acid electric storage battery (col. 3, line 28-col. 4, line 3).

Knauer does not explicitly state that the pocket separator has a plurality of studs on at least one side of the separator and two to four elongated vertical ribs in a center area of the at least one side.

However, Grimes teaches an electrochemical cell having a microporous separator sheet with a plurality of projections. The projections may be pebble shaped, rod shaped or a

combination of pebble-shaped and rod-shaped. See col. 5, lines 1-25. Figure 7c of Grimes shows a separator with a plurality of studs on at least one side and two to four elongated vertical ribs in a center area of the at least one side. The studs and the ribs have the same height. Figure 7c discloses a separator similar to the inventive separator shown in Fig. 1 of the instant specification. The microporous sheet material is Daramic (ultrahigh molecular weight polyethylene, see Daramic II-V: Polyethylene battery separators for starter batteries) (5:31-34). The Daramic separator sheet is 100 vol% of a polyolefin (polyethylene).

Therefore, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because Grimes teaches a microporous polyethylene battery separator may have many different types of projections on the separator sheet. The projections may be in the form of pebbles, rods or a combination of both. Grimes teaches a separator with a plurality of studs on at least one side and two to four elongated vertical ribs in a center area of the at least one side (Figure 7c). One of skill would be motivated to use the configuration shown in Fig. 7c for the separator of Knauer because Grimes teaches projections such as pebbles, rods or a combination of both are known in the art. Furthermore, Grimes teaches the discontinuous rod configuration of Knauer in Fig. 7b. Thus, Grimes teaches both Fig. 7b and 7c are known separator configurations. Grimes teaches that Figures 7a-7d are equivalent separator configurations.

Furthermore, Grimes teaches the design of the projections allow for an expeditious flow of electrolyte (5:26-30). The electrolyte flows without entrapping gas bubbles about the projections. Thus, one of skill would be further motivated to use the projection configuration of Grimes for the separator of Knauer in order to improve electrolyte flow.

Furthermore, Grimes teaches the projections provide structural means against collapse of the separator against the conductive electrode surface. Thus, one of skill would be further motivated to use the projection configuration of Grimes for the separator of Knauer in order to prevent the separator from collapsing upon the electrode surface.

Furthermore, Daramic II-V: Polyethylene battery separators for starter batteries teaches Daramic is a known separator material for forming pocketed electrodes. Daramic separators are flexible, foldable and sealable and are thus suited for making separator pockets for positive and negative electrodes. Therefore, one of skill in the art would have been motivated to use the Daramic separator of Grimes for the pocket separator of Knauer.

Response to Arguments

Applicant's arguments with respect to claims 1, 5, 7, 8 and 11-15 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

Claim 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the claim is directed toward a pocket battery separator comprising a microporous polyethylene sheet provided with a plurality of studs in a center area of at least a first side of the sheet and two to four elongated vertical ribs in the center area of at least the first side of the sheet provided with the plurality of studs. The ribs are formed of a different material than the separator sheet.

The prior art does not teach the claimed separator sheet with a plurality of studs and two to four elongated vertical ribs wherein the two to four ribs are a different material than the material of the separator sheet.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is 571-272-1285. The examiner can normally be reached on Monday-Thursday (9:00-7:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Tracy Dove", written in a cursive style.

Tracy Dove
Patent Examiner
Technology Center 1700
Art Unit 1745

May 26, 2004